

CALIFORNIA REGIONAL WATER QUALITY BOARD
CENTRAL VALLEY REGION

ORDER NO. 96-286

34-AA-0018

WASTE DISCHARGE REQUIREMENTS
FOR
CLOSURE AND POST CLOSURE MAINTENANCE OF
CITY OF SACRAMENTO
28TH STREET LANDFILL FACILITY
CLASS III LANDFILL
SACRAMENTO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The City of Sacramento (hereafter Discharger) owns and operates the 28th Street Class III Landfill Facility. The facility was previously regulated by Waste Discharge Requirements (WDRs) Order No. 95-224 in conformance with Title 23, California Code of Regulations (CCR), Division 3, Chapter 15 (hereafter Chapter 15) and RCRA Subtitle D. The Discharger submitted a Report of Waste Discharge, dated 23 September 1996, requesting changes to deadlines for completion of closure construction and submission of a technical report containing concentration limits for constituents listed in the Monitoring and Reporting Program. These WDRs contain the new deadlines.
2. The 172.2-acre facility is comprised of Assessor's Parcel Numbers 001-0170-018, 001-0170-021 and 001-0170-026. Waste disposal activities have taken place on 129.5 acres of the facility with an additional buffer area of 42.7 acres, for a total City owned acreage of 172.2 acres. The facility is at the north end of 28th Street near the northeast corner of downtown Sacramento, as shown in Attachment A, which is incorporated herein and made part of this Order.
3. The waste management facility consists of two landfill units (107-acres) east of 28th Street and a compost operation (10-acres) to the west of 28th Street. The landfill units include an older unlined 79.5-acre site, referred to as "WMU-A", and a newer clay lined 27.5-acre expansion site referred to as "WMU-B", east of and adjacent to the older site as shown on Attachment B, which is incorporated and made a part of this Order. West of 28th Street is the City of Sacramento's inactive solid waste disposal site. Landfilling took place on 22.5-acres west of 28th Street from approximately 1963 to 1971. The area is currently utilized for the storage of low permeability clay and daily cover soil, and as a compost facility. This acreage is now being included in the total permitted facility acreage at the request of the California Integrated Waste Management Board (CIWMB).
4. Significant acreage, including the Dellar property, has been landfilled to the west of the current 28th Street Landfill. This area is privately owned and the City of Sacramento has no plans to include this acreage in the permitted site closure schedule. However, the existing network of 19 groundwater quality monitoring wells does encompass the area to the west of the City-owned property.

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5. Municipal refuse was initially placed in WMU A in a cut and fill operation to an elevation of about 15 feet above mean sea level (MSL). WDRs Order No. 75-155 prohibited discharge of waste below an elevation of 20 feet above MSL after June 1975. About 20 to 25 feet of fill was placed from a southwest to northeast direction across the site. In 1984, the initial lift was completed and the direction of filling changed to southwesterly with an average seven-foot lift placed over the entire WMU A. Additional waste was placed in phases over the site to achieve final grades between 3 and 10 percent in preparation for closure construction. The WMU A reached final design elevation in November 1991.
6. WMU B was constructed in 1985 with a 1.5 foot-thick clay liner with a maximum permeability of 1×10^{-7} cm/sec overlain by an additional 1.5 feet of compacted soil with a maximum permeability of 1×10^{-5} cm/sec. The clay liner extends up the sides of the containment berms to an elevation varying from 27 feet above MSL at the west end of the unit to 30 feet above MSL at the northeast end. The liner is underlain by a subdrain constructed of a gravel blanket and perforated pipe laterals to help protect the liner from uplift due to high groundwater. A dendritic type leachate collection and removal system was built over the compacted liner. WMU B was excavated so that the waste disposal occurred at a minimum elevation of 15 feet above MSL. This elevation was allowed because the engineered clay liner was designed to prevent inundation of the waste by groundwater.
7. Part of the surface runoff is discharged to the American River. The remaining surface water runoff, groundwater pumped due to cleanup activity, and any leachate from the WMU B leachate collection and removal system (LCRS) are discharged to the City's sanitary sewer system which flows to and is treated at the Sacramento Regional Wastewater Treatment Plant. An industrial sewer use permit for the landfill was obtained from the County of Sacramento. Following landfill closure construction, surface water runoff will be diverted to channels for eventual discharge into the American River. Any leachate or groundwater collected during the post-closure period will be pumped to the sanitary sewer system.
8. The final capacity of the facility was increased to 6,514,000 cubic yards as a result of approval of the 1991 Final Closure and Post-Closure Maintenance Plan. The Plan increased the final construction elevations of WMU A from 72 feet above MSL to 86 feet above MSL to allow for an anticipated total settlement of the landfill over a 30 year period which would ensure that positive surface drainage would be maintained during the post-closure period. As a result of this change the landfill capacity was increased by an estimated 1,205,000 cubic yards. The capacity of WMU B was also slightly increased by 134,000 cubic yards as a result of change in the surface drainage from underground drainage to "V" ditches. As a result of the increased capacity the active life of the landfill was extended to September 1994 when the landfill ceased accepting municipal solid wastes. The landfill continues to accept inert wastes such as concrete and asphalt rubble for incorporation into the foundation layer of the final cover. A Closure and Post-Closure Amendment Plan is expected to be submitted by the Discharger on 1 January 1996.

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9. A final cover consisting of, described from top to bottom as, one-foot of soil cover on top of, one-foot of low permeability clay, two-feet of concrete and asphalt rubble, and one-foot of intermediate soil cover has been installed on most of the unlined WMU A to date. Another 3.5 acres of final cover needs to be installed to complete the final cover section over the unlined waste management unit. The remaining 3.5 acres of WMU A will be completed by 31 December 1997.
10. WMU B will receive the same final cover as described above in Finding 9. Installation of the final cover section's foundation layer over WMU B is in progress. The 27.5-acre unit will have the foundation layer installed in phases starting with the 10-acre section in the northeast quadrant of the unit. Completion of the foundation layer is anticipated in Fall 1995. Installation of the clay and soil layers will take place in spring 1997. Final site closure is expected to be complete by 31 December 1997.
11. Landfill access roads, detention ponds, the paved employee parking lot, and the American River levee occupy a portion of the 107-acre area and will not receive final cover. Landfill access roads, which will continue to be used during the post-closure maintenance period, will be slurry sealed with an asphalt emulsion. This slurry seal will be reapplied as required to maintain an impermeable surface.
12. The 22.5-acres landfilled to the west of 28th Street (the inactive site) was not included in the 18 June 1991 Final Closure Plan. However, under the Closure Plan Amendment dated October 1993, the Discharger proposes to apply the final cover sections described in Findings 13 and 14 following.
13. The final cover applied to the 10-acre compost facility consists of, described from top to bottom as, 3-inches of asphaltic concrete, which will provide an all weather surface and prevent infiltration of water, on top of 6-inches of asphalt street grinding, two-feet of concrete and asphalt rubble, and one-foot of soil cover. After compost operations are moved to the permanent full scale facility, the condition of the asphalt paving will be evaluated and repairs will be made, as necessary, to maintain the water tight integrity of the paving.
14. The 12.5-acre open space south of the compost facility, which is currently used to stockpile final cover clay and daily cover soil, will be graded to drain (3% slope or greater) and shall receive the final cover described, from top to bottom as, two-feet of soil cover on top of 6-inches of asphalt street grinding, two-feet of concrete and asphalt rubble, and 6-inches of soil cover. This area contains waste which is over 22 years old. Historic groundwater monitoring data indicates that this area does not pose a threat to groundwater.

OPERATION OF FACILITIES

15. Solid waste currently being disposed of at the 28th Street Class III Landfill Facility is limited to concrete and asphalt rubble for incorporation into the foundation layer of the final cover. All City

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collected municipal solid waste is being hauled to the County landfill. Green waste is accepted at the compost facility.

16. The compost program will continue to be operated as an interim facility until the year 2000, or until a large scale facility can be sited and developed by the Sacramento County Regional Solid Waste Authority (SWA). If a regional facility is developed sooner, composting activities will be transferred to the SWA facility and the compost program at the 28th Street facility will be discontinued.

DESCRIPTION OF THE SITE

17. The American River borders the landfill to the north and is the major topographic feature in the vicinity of the landfill. The landfill and adjoining land are basically flat at an elevation of about 90 feet above MSL with about 45 feet of local topographic relief due to landfill construction. Other man-made features in the area include flood control levees and highway and railway embankments. Interstate Business 80 (formerly Interstate 80) is along the southeastern border of the landfill.
18. Land within 1000 feet of the facility is used for domestic housing, industry, agriculture, recreation, and open space.
19. The soils immediately underlying the WMUs are primarily sandy silt to fine or medium grained sand. Hydraulic conductivities were measured between about 1×10^{-2} cm/sec and 1×10^{-4} cm/sec. These soils were derived from flood basin and stream channel deposits and are 200 to 300 feet thick. The City's SWAT report indicates that the aquifer beneath the landfill has a large capacity to store and transmit water.
20. Groundwater elevations at the landfill vary seasonally and correspond to fluctuations in water levels in the American River. Groundwater elevations in monitoring wells at the landfill are typically in the range of 2 to 20 feet above MSL. At 20 feet above MSL, groundwater elevations are five or more feet above the base of the WMUs.
21. During the winter of 1986 and the spring of 1995, groundwater elevations greater than 25 feet above MSL were measured at the landfill. Therefore, a portion of the waste in the unlined WMU A was inundated by groundwater during 1986 and 1995.
22. Groundwater gradients are south to southwesterly in the winter during high river stages. Northerly groundwater gradients occur between the central portion of the landfill and the river during the late spring, summer, and fall months when river flow is low. The net hydraulic gradient is to the southwest and net groundwater flow is about 30 to 50 feet per year. Due to the seasonal changes in groundwater flow direction in areas of the facility adjacent to the river, monitoring wells used at this site for background water quality data are not necessarily upgradient from the landfill at all times.

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23. Monitoring well data also indicate a significant vertical hydraulic gradient can occur in the area south of Interstate Business 80. This downward gradient is associated with pumping of a nearby agricultural supply well.
24. A release of waste from the landfill to groundwater was identified in 1985 and evaluated in the City's Solid Waste Water Quality Assessment Test (SWAT) report in 1987. SWAT report data and ongoing monitoring indicate that groundwater beneath the inactive site is more contaminated than beneath the active site.
25. Migration of landfill gas (LFG) from the active site was identified in 1987. The effects of LFG migration include distressed vegetation along the American River and south of the landfill near Interstate Business 80. Elevated levels of ammonia in soil were also found in these areas.
26. The Discharger has constructed a passive LFG collection trench east of the active site to intercept any LFG migrating in that direction.
27. The Discharger plans to install landfill gas control and extraction systems in areas of the landfill that have reached final grade. The interior landfill gas collection system is operated and maintained by Laidlaw Gas Recovery Systems, Inc. Development plans for the landfill gas collection system assume that the full system will be installed in three phases. The first and second phases of the system, encompassing WMU A, have been installed and are currently operating. Condensate from the gas collection system is discharged to the sanitary sewer. The third phase will be installed in WMU B after the unit has reached final grades. Installation is estimated to take place in 1997.
28. The beneficial uses of groundwater are domestic, municipal, agricultural, and industrial supply.
29. The facility receives an average of 18 inches of precipitation per year.
30. The 100-year, 24-hour precipitation event for the facility is 4.8 inches, as calculated from Rainfall Intensity, Duration and Frequency for Sacramento County Based on the Period 1903-1950, Plate No. 2.
31. The facility is not within a 100-year flood plain. The facility's containment levees and other embankments are designed to prevent inundation or washout of waste management units due to floods with a 100-year return period.
32. Most of the surface water flows to the American River which is tributary to the Sacramento River. The remaining portion of surface water runoff flows into the sanitary sewer system.
33. The beneficial uses of these surface waters are domestic, municipal, agricultural, and industrial supply; groundwater recharge; power generation; recreation; esthetic enjoyment; navigation; fresh water replenishment; and preservation and enhancement of fish, wildlife, and other aquatic resources.

CEQA AND OTHER CONSIDERATIONS

34. This action to revise WDRs for this facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.), in accordance with Title 14, CCR, Section 15301.
35. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulation (Title 40, Code of Federal Regulations, Parts 257 and 258, "federal municipal solid waste (MSW) regulations" or "Subtitle D") that apply, in California, to dischargers who own or operate Class II or Class III landfill units at which municipal solid waste (MSWLF) is discharged. The majority of the federal MSW regulations became effective on the "Federal Deadline", which is 9 October 1993. Since this landfill received municipal solid waste until July 1994, Subtitle D requirements which went into effect on 9 October 1993 are applicable to this facility.
36. This Order implements
 - a. the Water Quality Control Plan, Third Edition, the Sacramento River Basin and the San Joaquin River Basin;
 - b. the prescriptive standards and performance goals of Chapter 15, Division 3, Title 23 of the California Code of Regulations, effective 27 November 1984, and subsequent revisions;
 - c. the prescriptive standards and performance criteria of Part 258, Title 40 of the Code of Federal Regulations (Subtitle D of the Resource Conservation and Recovery Act); and
 - d. State Water Resources Control Board Resolution No. 93-62, Policy for Regulation of Discharges of Municipal Solid Waste, adopted 17 June 1993.

PROCEDURAL REQUIREMENTS

37. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
38. The Board has notified the Discharger and interested agencies and persons of its intention to revise the waste discharge requirements for this facility.
39. In a public hearing, the Board heard and considered all comments pertaining to this facility and discharge.

IT IS HEREBY ORDERED that Order No. 95-224 is rescinded, and it is further ordered that the City of Sacramento and its agents, assigns and successors, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. The discharge of any waste, other than that which is directed to the composting facility, at this site is prohibited.
2. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses or to groundwater is prohibited.

B. DISCHARGE SPECIFICATIONS

General Specifications

1. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control and the compaction of clay caps.

Protection From Storm Events

2. Precipitation and drainage control systems shall be designed, constructed and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation conditions.
3. Annually, prior to the anticipated rainy season, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the site and to prevent surface drainage from contacting or percolating through wastes.

Landfill Closure Specifications

4. The inactive site was closed prior to the revision of Chapter 15 in November 1984. Therefore, this area was not required to close with additional cover materials. However, this does not relieve the Discharger from any more stringent requirements of the California Integrated Waste Management Board, nor from the responsibility to take corrective action to prevent or clean up groundwater and/or surface water contamination related to this landfill unit.
5. At closure WMUs A and B shall receive a final cover consisting, at a minimum, of a two-foot thick foundation layer which may contain waste materials, overlain by a one-foot thick clay cap, and finally by a one-foot thick vegetative soil layer.
6. Design of the landfill cap shall include a Construction Quality Assurance Plan, which shall:
 - a. be submitted for review and approval by the Board staff prior to construction;

- b. demonstrate that the landfill cap has been constructed according to the specifications and plans as approved by the Board staff; and
 - c. provide quality control on the materials and construction practices used to construct the waste management unit and prevent the use of inferior products and/or materials which do not meet the approved design plans or specifications.
7. The landfill cap shall have a hydraulic conductivity of 1×10^{-6} cm/sec or less and a minimum relative compaction of 90%. Hydraulic conductivities of cap materials shall be determined by laboratory tests using water. Hydraulic conductivities determined through laboratory methods shall be confirmed by field testing in accordance with the Standard Provisions and Reporting Requirements as described in Provision D.1.
8. Vegetation shall be planted and maintained over each closed landfill unit. Vegetation shall be selected to require a minimum of irrigation and maintenance and shall have a rooting depth not in excess of the vegetative layer thickness.
9. Closed landfill units shall be graded to at least a three percent grade and maintained to prevent ponding.

C. RECEIVING WATER LIMITATIONS

Water Quality Protection Standards

The concentrations of Constituents of Concern in waters passing through the Points of Compliance shall not exceed the Concentration Limits established pursuant to Monitoring and Reporting Program No. 96-286, which is attached to and made part of this Order.

D. PROVISIONS

- 1. The Discharger shall comply with the Standard Provisions and Reporting Requirements, dated September 1993, which are hereby incorporated into this Order. The Standard Provisions and Reporting Requirements contain important provisions and requirements with which the Discharger must comply. A violation of any of the Standard Provisions and Reporting Requirements is a violation of these waste discharge requirements.
- 2. The Discharger shall comply with all applicable provisions of 23 CCR Chapter 15 and 40 CFR Part 258 that are not specifically referred to in this Order.
- 3. The Discharger shall comply with Monitoring and Reporting Program No. 96-286, which is attached to and made part of this Order. This compliance includes, but is not limited to, maintenance of waste containment facilities and precipitation and drainage controls and monitoring groundwater, leachate from the landfill units, and surface waters, throughout the

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active life of the waste management units and the post-closure maintenance period. A violation of Monitoring and Reporting Program No. 96-286 is a violation of these waste discharge requirements.

4. The Discharger shall maintain legible records of the volume and type of each waste discharged at each landfill and the manner and location of the discharge. Such records shall be maintained at the facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the Board and of the State Water Resources Control Board at anytime during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Regional Board.
5. The Discharger shall provide proof to the Board within sixty days after completing final closure that the deed to the landfill facility property, or some other instrument that is normally examined during title search, has been modified to include, in perpetuity, a notation to any potential purchaser of the property stating that:
 - a. the parcel has been used as a municipal solid waste landfill (MSWLF);
 - b. land use options for the parcel are restricted in accordance with the post-closure land uses set forth in the post-closure plan and in waste discharge requirements for the landfill; and
 - c. in the event that the Discharger defaults on carrying out either the post-closure maintenance plan or any corrective action needed to address a release, then the responsibility for carrying out such work falls to the property owner.
6. The Board will review this Order periodically and may revise requirements when necessary.
7. The Discharger shall complete the tasks outlined in these waste discharge requirements and the attached Monitoring and Reporting program No. 96-286 in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
Submit Closure/Post-Closure Amendment Plan	1 January 1996
Prepare closure plans and specifications	1 March 1996
Complete Closure Construction	31 December 1997
Submit report containing concentration limits for constituents listed in the Monitoring and Reporting Program	1 April 1997

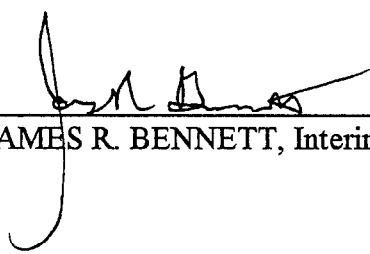
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E. REPORTING REQUIREMENTS

1. The Discharger shall comply with the reporting requirements specified in this Order, in Monitoring and Reporting Program Order No. 96-286 and in the Standard Provisions and Reporting Requirements.
2. The Discharger shall submit a closure and post-closure maintenance plan (or submit suitable modifications to a pre-existing plan), that complies with 40 CFR 258.60 and 258.61, with Article 8 of Chapter 15 and Title 14 of the CCR.
3. In the event of any change in ownership of this waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Board.
4. The Discharger shall submit a status report regarding the financial assurances for corrective action and closure every five years after the date of adoption of these requirements that either validates the ongoing viability of the financial instrument or proposes and substantiates any needed changes.

I, JAMES R. BENNETT, Interim Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 6 December 1996.


JAMES R. BENNETT, Interim Executive Officer

Attachments
RAE/nmc
6 December 1996

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 96-286
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The Discharger shall maintain water quality monitoring systems that are appropriate for detection monitoring and corrective action and that comply with the provisions of Title 23, California Code of Regulations (CCR), Division 3, Chapter 15, Article 5.

Monitoring data indicate a release from the landfill. Closure and capping of the landfill will serve as part of a corrective action under Article 5 of Chapter 15.

Compliance with this Monitoring and Reporting Program, and with the companion Standard Provisions and Reporting Requirements, is ordered by Waste Discharge Requirements Order No. 96-286. Failure to comply with this Program, or with the Standard Provisions and Reporting Requirements, constitutes non-compliance with the waste discharge requirements and with the Water Code, which can result in the imposition of civil monetary liability.

A. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in the Standard Provisions and Reporting Requirements. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in non-compliance with the waste discharge requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. A short discussion of the monitoring results, including notations of any water quality violations, shall precede the tabular summaries.

Field and laboratory tests shall be reported in the semi-annual monitoring reports. Semi-annual monitoring reports shall be submitted to the Board by the **15th day of the month** following the calendar quarter in which the samples were taken. The results of any monitoring done more frequently than required at the locations specified herein shall be reported to the Board. An annual report shall be submitted to the Board which contains both tabular and graphical summaries of the monitoring data obtained during the previous twelve months, so as to show historical trends at each well. The report shall include a discussion of the progress toward re-establishment of compliance with waste discharge requirements and water quality protection standard.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those which cannot be quantified and/or specifically identified. Metals shall be analyzed according to the methods listed in Attachment D.

B. REQUIRED MONITORING REPORTS

1. Water Quality Protection Standard Report

The Discharger submitted a revised water quality protection standard in the "*Closure Plan Amendment*" dated October 1993. Any changes to this water quality protection standard shall be described in the annual monitoring report.

2. Detection Monitoring and Corrective Action Report

The Discharger shall submit reports of the results of detection monitoring and corrective action in accordance with the schedules specified in this Monitoring and Reporting Program.

3. Annual Monitoring Summary Report

The Discharger shall submit the Annual Monitoring Summary Report as specified in the Standard Provisions and Reporting Requirements.

4. Constituents-of-Concern (COC) 5 Year Report

In the absence of a *new* release being indicated, the Discharger shall monitor all Constituents of Concern for all Monitoring Points for each monitored medium for all COCs every fifth year, beginning with calendar year 1996 (the first Reporting Period ends 31 March 1996) with subsequent COC monitoring efforts being carried out every fifth year thereafter alternately in the Summer (Reporting period ends 30 September) and Winter (Reporting Period ends 31 March). The COC Report may be combined with a Detection Monitoring Report or an Annual Summary Report having a Reporting Period that ends at the same time.

5. Constituents-of-Concern (COC) Leachate Detection Report

The Discharger shall report to the Board by no later than **31 January** of a given year the analytical results of the leachate sample taken the previous Fall, including an identification of all detected COCs in Attachment D that are not on the landfill's Constituent of Concern list.

During any year in which a Spring leachate re-test is performed, the Discharger shall submit a report to the Board, by no later than 31 July of that year, identifying all constituents which must be added to

the landfill's COC list as a result of having been detected in both the (previous calendar year's) Fall sample and in the Spring re-test sample.

Standard Observations

Each monitoring report shall include a summary and certification of completion of all Standard Observations for the waste management unit, for the perimeter of the waste management unit, and for the receiving waters. The standard observations shall be performed on a semiannual basis and shall include those elements as defined in the Standard Provisions and Reporting Requirements.

C. MONITORING

If the Discharger, through a detection monitoring program, or the Board finds that there is a statistically significant increase in indicator parameters or waste constituents over the water quality protection standards (established pursuant to Monitoring and Reporting Program No. 96-286) at or beyond the Points of Compliance, the Discharger shall notify the Board or acknowledge the Board's finding in writing within seven days, and shall immediately resample for the constituent(s) or parameter(s) at the point where the standard was exceeded. Within 90 days, the Discharger shall submit to the Board the results of the resampling and either:

1. a report demonstrating that the water quality protection standard was not, in fact, exceeded; or
2. an amended Report of Waste Discharge for the establishment of a verification monitoring program, per Section 2557 of Chapter 15, which is designed to verify that water quality protection standards have been exceeded and to determine the horizontal and vertical extent of pollution.

If the Discharger, through an evaluation monitoring program, or the Board verifies that water quality protection standards have been exceeded at or beyond the Points of Compliance, the Discharger shall notify the Board or acknowledge the Board's finding in writing within seven days. Within 180 days, the Discharger shall submit to the Board an amended Report of Waste Discharge for the establishment of a corrective action program, per Section 2558 of Chapter 15, which is designed to achieve compliance with the water quality protection standards.

D. REQUIRED MONITORING PROGRAMS

1. Detection Monitoring and Corrective Action Program

For each monitored medium, all Monitoring Points assigned to detection monitoring and/or corrective action monitoring shall be monitored once each calendar quarter for the Monitoring Parameters listed in this Program, unless otherwise specified. The Discharger shall report, in writing, to the regional

board on the effectiveness of the corrective action program. The Discharger shall submit these reports at least semi-annually.

For any given monitored medium, a sufficient number of samples shall be taken from all Monitoring Points to satisfy the data analysis requirements for a given Reporting Period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.

Ground water sampling shall also include an accurate determination of the ground water surface elevation and field parameters (pH, temperature, electrical conductivity, turbidity) for that Monitoring Point. Ground water elevations taken prior to purging the well and sampling for Monitoring Parameters shall be used to fulfill the ground water gradient/direction analyses required. For each monitored ground water body, the Discharger shall measure the water level in each well and determine ground water gradient and direction at least semi-annually, including the times of expected highest and lowest elevations of the water level for the respective ground water body. Ground water elevations for all upgradient and downgradient wells for a given ground water body shall be measured within a period of time short enough to avoid temporal variations in ground water flow which could preclude accurate determination of ground water gradient and direction. This information shall be included in the semi-annual monitoring reports.

Statistical or non-statistical analysis should be performed as soon as the monitoring data are available.

2. Leachate Monitoring

The landfill sumps shall be inspected weekly for leachate generation. Leachate monitoring shall be conducted as specified in Table I - Leachate Monitoring Program. The quantity of leachate pumped from each sump shall be measured continuously and reported as Leachate Flow Rate (in gallons/day).

TABLE I - LEACHATE MONITORING

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Total Flow	gallons	Monthly
Flow Rate	gallons/day	Monthly
Specific Conductance	μ mhos/cm	Monthly
pH	pH units	Monthly
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	Quarterly
Chlorides	mg/L	Quarterly
Sulfates	mg/L	Quarterly
Nitrate - Nitrogen	mg/L	Quarterly
Constituents of Concern		
Total Organic Carbon	mg/L	Annually
Carbonate	mg/L	Annually
Bicarbonate	mg/L	Annually
Alkalinity	mg/L	Annually
Volatile Organic Compounds (EPA Method 8260, see Attachment D)	μ g/L	Annually
Semi-Volatile Organic Compounds (EPA Method 8270, see Attachment D)	μ g/L	5 years
Organochlorine Pesticide, PCBs (EPA Method 8080, see Attachment D)	μ g/L	5 years
Chlorophenoxy Herbicides (EPA Method 8150, see Attachment D)	μ g/L	5 years
Inorganics (dissolved) (See Attachment D for Method)	mg/L	5 years

3. Ground Water Monitoring

Field and laboratory tests shall be reported in the semi-annual monitoring reports. All Monitoring Parameters shall be graphed so as to show historical trends at each well.

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The ground water surface elevation (in feet and hundredths, M.S.L.) in all wells shall be measured on a semi-annual basis and used to determine the velocity and direction of ground water flow. This information shall be displayed on a water table contour map and/or ground water flow net for the site and submitted with the semi-annual monitoring reports.

There are 19 ground water quality wells installed on and around the landfill. Monitoring wells C-9 and C-10 are background wells and will not be part of the corrective action monitoring network. These wells shall continue to be monitored quarterly for water-level measurements to assist in the determination of ground water flow direction.

The corrective action monitoring well network shall consist of wells B-1, B-4, B-6, C-7, C-8, C-11D, C-11S, C-12, C-13, C-14, C-15, D-16, D-17, D-18, D-19, and D-20. Locations of these wells are shown on Attachment B. Monitoring well B-3 is no longer being used and shall be properly abandoned. Samples shall be collected from the all wells at the frequency and for the parameters specified in Table II - Ground Water Corrective Action Monitoring Program. For the ground water monitoring wells specified under the corrective action program, the constituents of concern shall be analyzed every five years.

The landfill currently has two 50 GPM ground water extraction wells. These wells shall be operated and maintained in accordance with the approved ground water corrective action program.

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TABLE II
GROUND WATER CORRECTIVE ACTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Temperature	°C	Semi-annual
Ground Water Elevation	Ft. & hundredths, MSL	Semi-annual
Specific Conductance	μmhos/cm	Semi-annual
pH	pH units	Semi-annual
Turbidity	Turbidity units	Semi-annual
Monitoring Parameters*		
Total Dissolved Solids (TDS)	mg/L	Semi-annual
Chlorides	mg/L	Semi-annual
Sulfates	mg/L	Semi-annual
Nitrate - Nitrogen	mg/L	Semi-annual
Volatile Organic Compounds μg/L (EPA Method 8260, See Attachment C)		Semi-annual
Constituents of Concern		
Total Organic Carbon*	mg/L	5 years
Carbonate*	mg/L	5 years
Bicarbonate*	mg/L	5 years
Alkalinity*	mg/L	5 years
Volatile Organic Compounds* (EPA Method 8260, See Attachment D)	μg/L	5 years
Semi-Volatile Organic Compounds (EPA Method 8270, See Attachment D)	μg/L	5 years
Organochlorine Pesticide, PCBs (EPA Method 8080, See Attachment D)	μg/L	5 years
Chlorophenoxy Herbicides (EPA Method 8150, See Attachment D)	μg/L	5 years
Organophosphorus Compounds (EPA Method 8140, See Attachment D)	μg/L	5 years
Inorganics (dissolved)* (See Attachment D for Method)	mg/L	5 years

* Back ground wells to be monitored quarterly until at least four quarters of data have been collected to determine a concentration limit.

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4. Surface Water Monitoring

Surface water drainage is handled with sheet flow over the side slopes and collected by "V" type ditches to be carried offsite. To prevent ponding of storm water on the fill due to differential settlement, grading is periodically adjusted to maintain proper drainage. Drainage ditches are lined with low permeability clay and run to detention basins before the surface runoff leaves the site.

Surface water monitoring shall be performed at the landfill's northern detention basin outfall (SW-1) which discharges to the American River and the existing 18-inch corrugated metal pipe (SW-2) which drains about 20% of the landfill area to the American River. Surface water samples are to be collected after the first storm of the rainy season which produces significant flow and semi-annually thereafter when water is present. Samples shall be collected from all stations and analyzed at the frequency and for the monitoring parameters specified in Table III - Surface Water Monitoring Program.

Surface water monitoring reports shall be submitted with the corresponding semi-annual ground water monitoring and shall include evaluation of potential impacts of the facility on surface water quality and compliance with the Water Quality Protection Standard.

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TABLE III - SURFACE WATER MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Temperature	°C	Semi-annual
Specific Conductance	μmhos/cm	Semi-annual
pH	pH units	Semi-annual
Turbidity	Turbidity units	Semi-annual
Monitoring Parameters*		
Total Suspended Solids (TSS)	mg/L	Semi-annual
Total Dissolved Solids (TDS)	mg/L	Semi-annual
Chlorides	mg/L	Semi-annual
Sulfates	mg/L	Semi-annual
Nitrate - Nitrogen	mg/L	Semi-annual
Constituents of Concern*		
Total Organic Carbon	mg/L	Annually
Carbonate	mg/L	Annually
Bicarbonate	mg/L	Annually
Alkalinity	mg/L	Annually
Chemical Oxygen Demand	mg/L	Annually
Dissolved Oxygen	mg/L	Annually
Oil and Grease	mg/L	Annually
Inorganics(total recoverable metals) (See Attachment D for Method)	mg/L	Annually
<p>* To be monitored quarterly until at least four quarters of data have been collected to determine a concentration limit.</p>		

D. WATER QUALITY PROTECTION STANDARD

The Water Quality Protection Standard (Standard) consists of the following elements:

- a. Constituents of Concern;
- b. Concentration Limits;
- c. Monitoring Points;
- d. Points of Compliance; and
- e. Compliance Period.

Each of these is described as follows:

1. Constituents of Concern

The 'COC list' (list of Constituents of Concern required under 23 CCR 2550.3) shall include all constituents listed in Tables I, II, and III (above), the Waste Discharge Requirements No. 96-286, and all constituents listed in Attachment D. The Discharger shall monitor all COCs every five years, or more frequently as required under the corrective action monitoring program.

2. Concentration Limits

The Concentration Limit for any given Constituent of Concern or Monitoring Parameter in a given monitored medium (i.e., the uppermost aquifer) at a landfill shall be as follows, and shall be used as the basis of comparison with data from the Monitoring Points in that monitored medium:

- a. The background value established in the waste discharge requirements by the Board for that constituent and medium;
- b. The constituent's background value, established anew during each Reporting Period using only data from all samples collected during that Reporting Period from the Background Monitoring Points for that monitored medium. Either:
 - (1) The mean (or median, as appropriate) and standard deviation (or other measure of central tendency, as appropriate) of the constituent's background data; or
 - (2) The constituent's MDL, in cases where less than 10 percent of the background samples exceed the constituent's MDL; or

- c. A concentration limit greater than background, as approved by the Board for use during or after corrective action.

Ground Water

Concentration limits for synthetic constituents in ground water samples shall be set at the analytical detection limits. Concentration limits for metals and general water quality parameters shall be calculated using the analytical data for background wells C-9 and C-10 when sufficient data is available.

Surface Water

Concentration limits for surface water shall be calculated as the upper tolerance limits calculated from background monitoring data. The concentration limits shall be updated on a semi-annual basis to provide ongoing definition of background surface water quality.

Each sampling event, analytical data obtained for surface water monitoring points will be compared to the upper tolerance limits (and lower tolerance limits in the case of nitrate-nitrogen and pH) calculated for background to determine the effectiveness of the corrective action program.

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GROUND WATER CONCENTRATION LIMITS

<u>Constituent</u>	<u>Units</u>	<u>Background</u>
Specific Conductance (EC)	µmhos/cm	*
pH	pH Units	*
Total Dissolved Solids (TDS)	mg/L	*
Bicarbonate Alkalinity	mg/L	*
Chloride	mg/L	*
Sulfate	mg/L	*
Nitrate as N	mg/L	*
Total Organic Carbon	mg/L	*
Carbonate	mg/L	*
Chemical Oxygen Demand	mg/L	*
VOCs (EPA 8260 and 8270)	µg/L	Detect
Organochlorine Pesticide, PCB (EPA 8080)	µg/L	Detect
Chlorophenoxy Herbicides (EPA 8150)	µg/L	Detect
Organophosphorus Compounds (EPA 8140)	µg/L	Detect
Aluminum, dissolved	mg/L	*
Antimony, dissolved	mg/L	*
Arsenic, dissolved	mg/L	*
Barium, dissolved	mg/L	*
Beryllium, dissolved	mg/L	*
Boron, dissolved	mg/L	*
Cadmium, dissolved	mg/L	*
Calcium, dissolved	mg/L	*
Chromium, dissolved	mg/L	*
Chromium VI ⁺ , dissolved	mg/L	*
Cobalt, dissolved	mg/L	*
Copper, dissolved	mg/L	*
Cyanide, dissolved	mg/L	*
Iron, dissolved	mg/L	*
Lead, dissolved	mg/L	*
Magnesium, dissolved	mg/L	*
Manganese, dissolved	mg/L	*
Mercury, dissolved	mg/L	*
Molybdenum, dissolved	mg/L	*
Nickel, dissolved	mg/L	*
Potassium, dissolved	mg/L	*
Selenium, dissolved	mg/L	*
Silver, dissolved	mg/L	*
Sodium, dissolved	mg/L	*
Sulfide, dissolved	mg/L	*
Thallium, dissolved	mg/L	*
Tin, dissolved	mg/L	*
Vanadium, dissolved	mg/L	*
Zinc, dissolved	mg/L	*

* To be monitored quarterly until at least four quarters of data have been collected to determine a concentration limit.

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3. Monitoring Points

The ground water monitoring points for corrective action shall be B-1, B-4, B-6, C-7, C-8, C-11D, C-11S, C-12, C-13, C-14, C-15, D-16, D-17, D-18, D-19, and D-20, and the surface water monitoring point for corrective action shall be the outfall locations, SW-1 and SW-2, as shown in Attachment B.

4. Points of Compliance

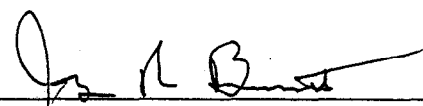
The points of compliance for ground water are monitoring wells B-1, B-4, B-6, C-7, and C-8.

5. Compliance Period

The Compliance Period is the number of years equal to the active life of the landfill plus the closure period. Each time the Standard is exceeded (i.e., a release is discovered), the landfill begins a Compliance Period on the date the Board directs the Discharger to begin an Evaluation Monitoring Program. If the Discharger's Corrective Action Program (CAP) has not achieved compliance with the Standard by the scheduled end of the Compliance Period, the Compliance Period is automatically extended until the landfill has been in continuous compliance for at least three consecutive years.

The Discharger shall implement the above monitoring program on the effective date of this Order.

Ordered by:


JAMES R. BENNETT, Interim Executive Officer

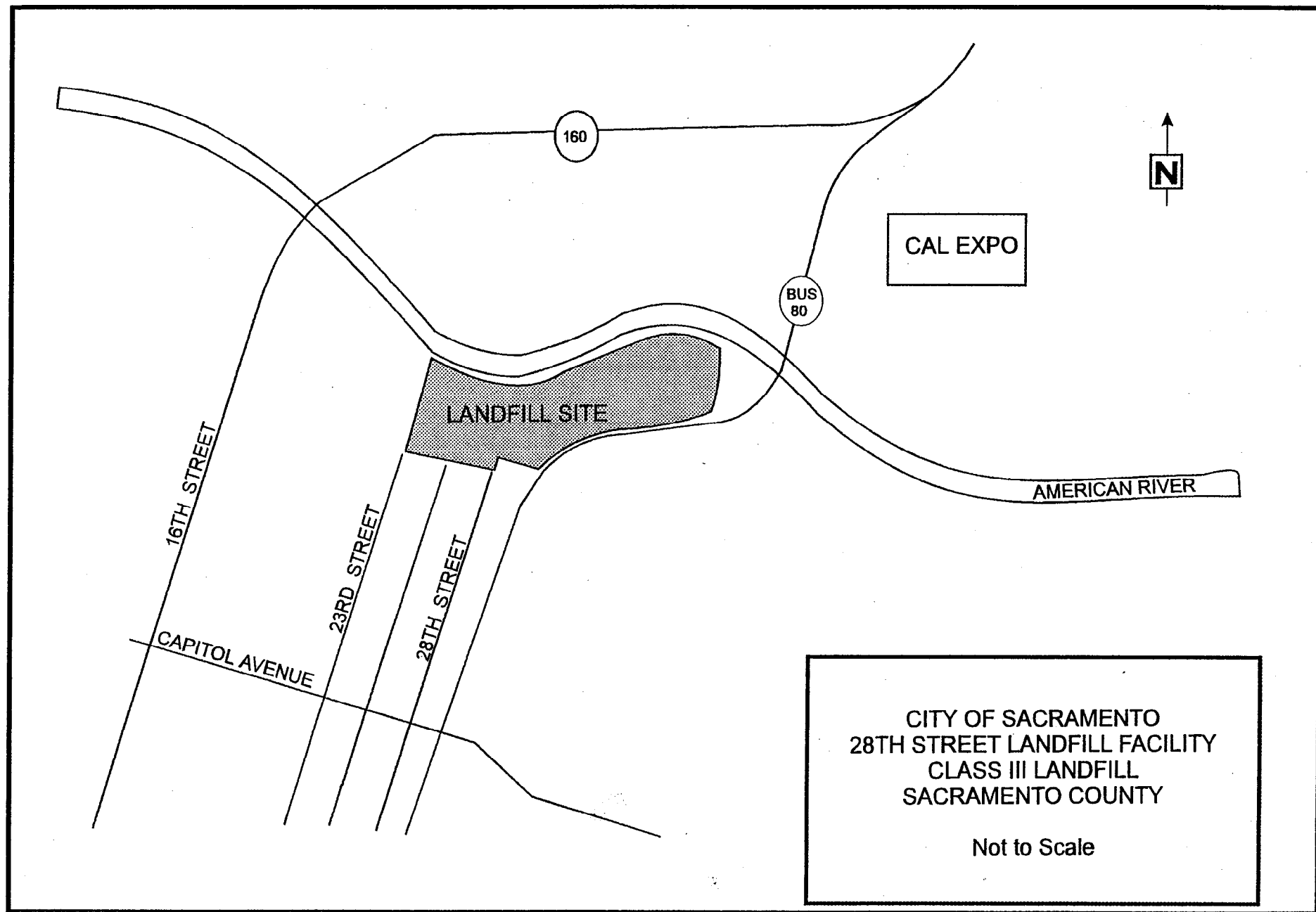
6 December 1996

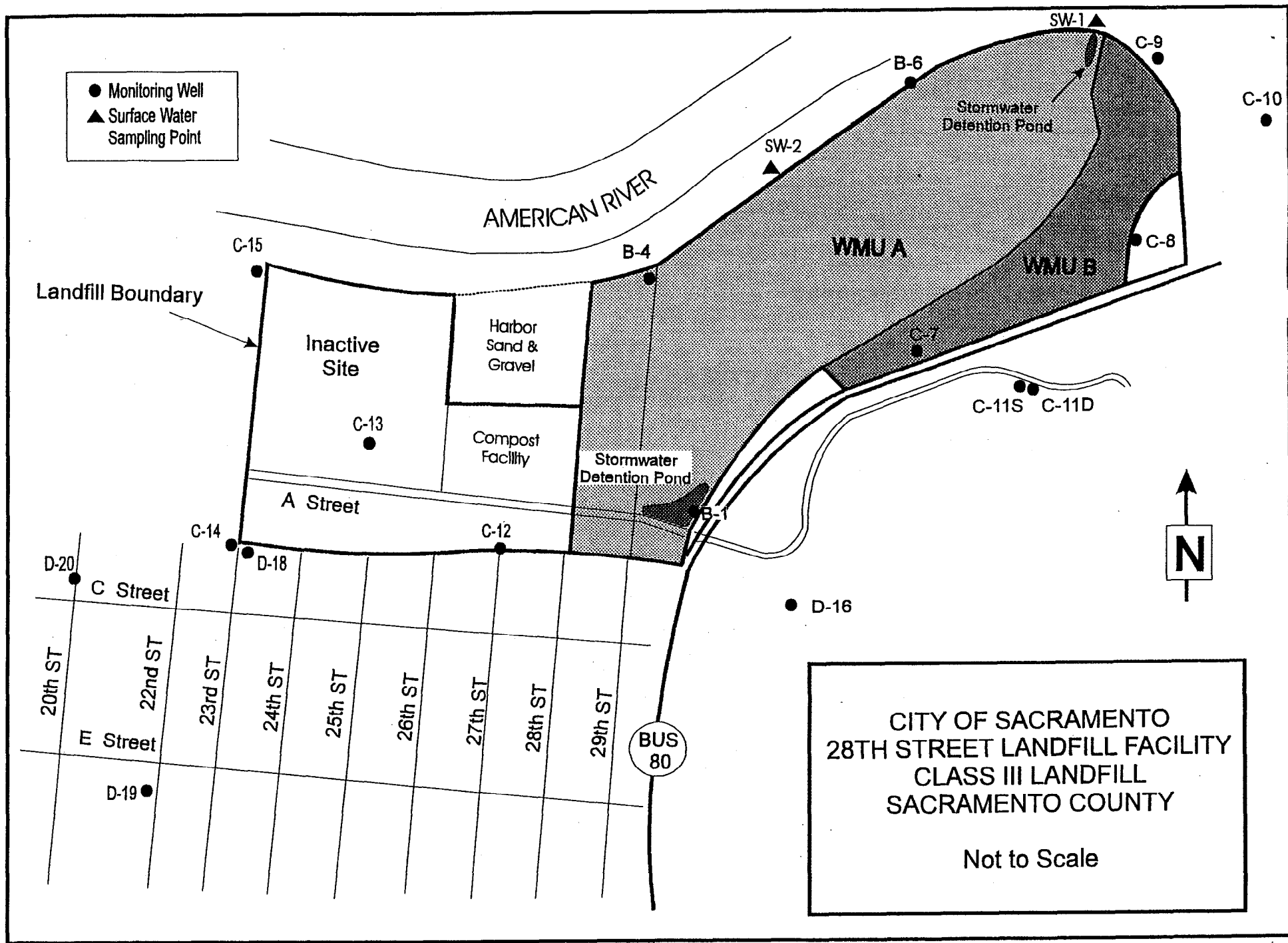
(Date)

Attachments

RAE/nmc

6 December 1996





Attachment C

MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

pH
Total Dissolved Solids
Specific Conductivity
Chloride
Sulfate
Nitrate nitrogen

Constituents included in VOC_{water} (by USEPA Method 8260):

Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1-Dichloroethylene (1,1-Dichloroethene; Vinylidene chloride)
cis-1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene

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Attachment C (continued)

2-Hexanone (Methyl butyl ketone)
Methyl bromide (Bromomethene)
Methyl chloride (Chloromethane)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
4-Methyl-2-pentanone (Methyl isobutylketone)
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,1,1-Trichloroethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC-11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride
Xylenes

Attachment D

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Inorganics (by USEPA Method):

Aluminum	6010
Antimony	6010
Barium	6010
Beryllium	6010
Cadmium	6010
Chromium	6010
Chromium VI ⁺	7197
Cobalt	6010
Copper	6010
Iron	6010
Manganese	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Arsenic	7061
Lead	7421
Mercury	7470
Nickel	7520
Selenium	7741
Thallium	7841
Cyanide	9010
Sulfide	9030

Report all peaks identified by the EPA test methods. Ground water and leachate samples shall be analyzed and reported as dissolved. Surface water samples shall be analyzed and reported as total recoverable metals as specified in EPA-600/4-79-020 dated March 1993. Unsaturated zone water samples shall be analyzed and reported as totals.

Volatile Organics (USEPA Method 8260):

Acetone
Acetonitrile (Methyl cyanide) Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene

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Attachment D (continued)

Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1-Dichloroethylene (1,1-Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Ethylbenzene
Hexachlorobutadiene
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Isodrin
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)

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Attachment D (continued)

Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane, Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semivolatile Organics (USEPA Method 8270 - base, neutral, & acid extractables):

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)

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Attachment D (continued)

Bis(2-ethylhexyl) phthalate
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
Chlordane
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Dieldrin
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimethylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine

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Attachment D (continued)

Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethyl methacrylate
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
Naphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)

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Attachment D (continued)

N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)
N-Nitrosomethylethylamine (Methylethylnitrosamine)
N-Nitrosopiperidine
N-Nitrosospyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

Organophosphorus Compounds (USEPA Method 8141):

0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)
Dimethoate
Disulfoton
Methyl parathion (Parathion methyl)
Parathion
Phorate

Chlorinated Herbicides (USEPA Method 8150):

2,4-D (2,4-Dichlorophenoxyacetic acid)
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

INFORMATION SHEET

CITY OF SACRAMENTO 28TH STREET LANDFILL FACILITY CLASS III LANDFILL SACRAMENTO COUNTY

The City of Sacramento has owned and operated the 28th Street Landfill since 1973. The facility is at the north end of 28th Street near the northeast corner of downtown Sacramento. West of 28th Street is the City of Sacramento's inactive solid waste disposal site. Landfilling took place on the 22.5 acres west of 28th Street from approximately 1963 to 1971. The area is currently used for the storage of low permeability clay and daily cover soil, and as a compost facility. The storage and composting facilities will be removed by the year 2000 for the future development of Sutter's Landing.

Waste disposal activities have been limited to 129.5 acres of the facility with an additional buffer area of 42.7 acres, for a total City owned acreage of 172.2 acres. The waste management facility consists of two landfill units east of 28th Street and a 10-acre compost facility and 12.5-acre open space west of 28th Street. The landfill units include an older unlined 79.5-acre site, referred to as "WMU-A," and a newer clay lined 27.5-acre expansion site referred to as "WMU-B," east of and adjacent to the older site.

Significant acreage has been landfilled to the west of the current 28th Street Landfill facility. This area, including the Dellar property, is privately owned, and the City of Sacramento has no plans to include this acreage in the permitted site closure schedule. However, the existing network of 19 ground water quality monitoring wells does encompass the area to the west of the City-owned property.

Ground water contamination at the landfill was identified in 1985 and evaluated in the facility's 1987 SWAT report. Elevated levels of leachate parameters including electrical conductivity, chloride, and vinyl chloride occur in ground water at the facility and south and west of the landfill. As a part of corrective action, the landfill has two ground water extraction wells operating at a rate of 50 gallons per minute each. Well P-1 was installed and began pumping in May 1991. Well P-2 was installed and began pumping in February 1992. Extracted water is discharged to the sanitary sewer system.

A report, dated 28 September 1992, was prepared by Kleinfelder, Inc. which contained a review of the 28th Street Landfill's ground water cleanup strategy. The report concludes that the installation of a landfill gas and condensate collection system and capping the landfill represents the best approach to remediation. Phases one and two of the landfill gas and condensate collection system have already been completed and are in full operation. Phase three, originally scheduled for completion in 1996, has been delayed until 1997. The City of Sacramento requested an extension of their closure time schedule in previous waste discharge requirements. The extension was required in order to allow the City of Sacramento to add a new flare the existing

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landfill gas and condensate collection system that can handle the entire amount of landfill gas generated at the site. Previously, the landfill gas was disposed to a privately owned cogeneration facility that is no longer in business. Modification of the landfill gas and condensate collection prior to capping the landfill was agreed to by the Local Enforcement Agency in order to prevent exacerbating the existing landfill gas migration problem. If the landfill gas and condensate collection system and ground water production wells perform as expected, the concentrations of leachate parameters in ground water will decrease over time.

RAE/nmc

6 December 1996